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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/088,227      | 03/19/2002  | Nigel Bruce Aldridge | 2101/50770          | 9920             |

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EXAMINER

PAK, SUNG H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/088,227 | <b>Applicant(s)</b><br>ALDRIDGE ET AL. |  |
|                              | <b>Examiner</b><br>Sung H. Pak       | <b>Art Unit</b><br>2874                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) 28-32 and 59-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27, 33-58 and 64 is/are rejected.
- 7) ☒ Claim(s) 14 and 45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                     | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                            | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0302</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

All references cited in the information disclosure statement filed on 3/19/2002 have been considered. Please refer to PTO-1449 enclosed herewith.

### ***Claim Objections***

Claims 14, 45 are objected to because of the following informalities: the claims recite the limitations "the depth marker" however, the limitations lack proper antecedent basis. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 11-13, 17-23, 26-27, 33-37, 42-44, 48-53, 56-58, 64 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 2 322 479 A.

'479 publication discloses an optical device with all the limitations set forth in the claims including: an optical coupling for connecting a first optical transmission means (25F1 in Fig. 4) embedded within a composite to a second optical transmission means external to the composite (25F2, Fig. 4), the coupling comprising: means for locating the position of the first optical transmission means embedded within the composite (Fig.

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10 and page 15 lines 19-27); a passageway formed within the composite to the embedded first optical transmission means (Fig. 10-11); an optical connection established between the first and second optical transmission means at the intersection of the passageway and the first optical transmission means (Fig. 12); wherein the passageway comprises a drilled or machined orifice through the composite from an exterior surface thereof to the first optical transmission means to a depth sufficient to sever the first optical transmission means (page 15 lines 19-27); a protective cap provided in the passageway (page 12 lines 25-27); wherein the tip of the first transmission means and the adhesive layer being the position marker and the depth marker to indicate the position and the depth of the passageway to be formed (Fig. 10, page 15 lines 19-27); an interface means alignable with the passageway to be in optical communication with first optical transmission means at the optical interface surface, the interface means being arranged to be accessible to the second optical transmission means (26C in Fig. 12); beam-steering resin block disposed in the composite (26C in Fig. 12); the end of the first optical transmission means being slanted and coated with metallic coating to provide beam splitting function within the composite (page 12 lines 4-8).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6-10, 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 322 479 A in view of Allen et al (US 5,500,913).

'479 publication discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach the use of laser beams for machining a hole through the composite.

'913 patent, on the other hand, explicitly discloses the use of laser beams, which have wavelengths different from the optical signal transmission wavelength, for machining a groove on the optical fiber (Fig. 5, column 7 lines 28-41). The use of laser beams for micro-machining optical devices is advantageous and desirable because it allows for precision cutting and drilling which is not capable through traditional mechanical machining. Therefore, it would have been obvious to a person of ordinary

skill in the art at the time the invention was made to modify the device of '479 publication to utilize laser beams for machining a hole through the composite.

Claims 14-16, 45-47, 24-25, 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 322 479 A.

Regarding claims 14-16, 45-47, '479 publication discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach the use of metallic coating as a position marker. However, the use of metallic position marker is well known and commonly used in the optical fiber coupling art. Such metallic position markers are well known to be advantageous and desirable because it allows for a simple and cost effective way of providing alignment markings that are easy to identify. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of '479 publication to have metallic markings.

Regarding claims 24-25, 54-55, '479 publication discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach the use of a graded index lens for collimating light beams. However, the use of GRIN lens for collimating light beams for enhancing optical coupling is well known and common in the fiber coupling art. GRIN lens are well known to be advantageous and desirable in optical coupling arrangement because it allows the transmitted light to be distributed evenly across the incident medium. Therefore, it would have been obvious to a person

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of ordinary skill in the art at the time the invention was made to modify the device of '479 publication to have GRIN lens.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (703) 308-4880. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.


The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Sung H. Pak  
Examiner  
Art Unit 2874

SP



HEMANG SANGHAVI  
PRIMARY EXAMINER